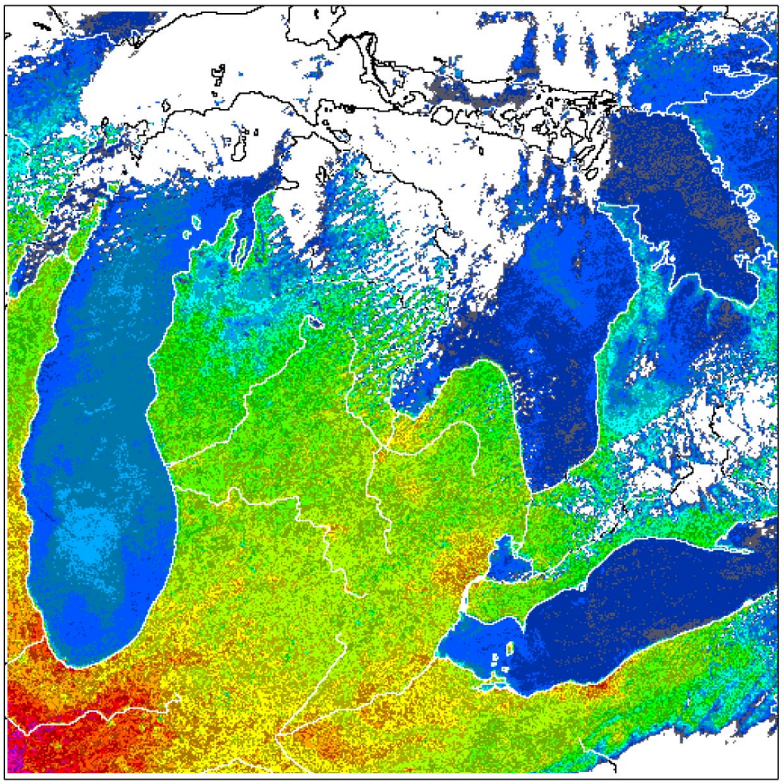
CoastWatch

CoastWatch is a nationwide National Oceanic and Atmospheric Administration (NOAA) program within which the Great Lakes Environmental Research Laboratory (GLERL) functions as the Great Lakes regional node. In this capacity, GLERL obtains, produces, and delivers environmental data and products for near real-time monitoring of the Great Lakes to support environmental science, decision making, and supporting research. This is achieved by providing access to near real-time and retrospective satellite observations and in-situ Great Lakes data to Federal, state, and local agencies, academic institutions, and the public. The goals and objectives of the CoastWatch Great Lakes Program directly support agency statutory responsibilities in estuarine and marine science, living marine resource protection, and ecosystem monitoring and management.

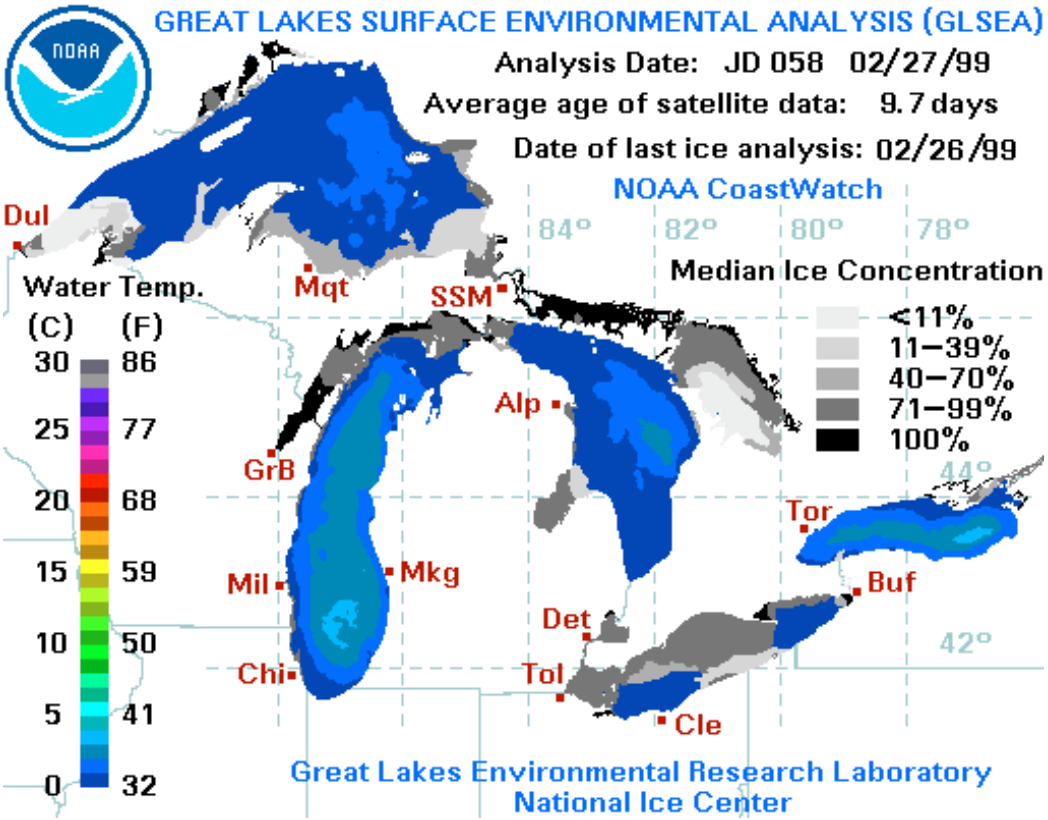
Federal, state, and local agencies, academic institutions, and the public, both within and outside of the Great Lakes region, have access to near real-time satellite observations and in-situ Great Lakes data received at GLERL. CoastWatch data are used in a variety of ways including monitoring (algal blooms, plumes, ice cover, water intake temperatures at fish hatcheries, etc.), two and three dimensional modeling of Great Lakes physical parameters such as wave height and currents, damage assessment modeling, research, and educational activities. In addition, through a cooperative project with Michigan Sea Grant, Great Lakes CoastWatch satellite-derived surface temperature imagery is contoured and made available via Michigan State Sea Grant's web site. Great Lakes CoastWatch data and products benefit riparians as well as commercial and recreational users.



Lake Michigan-Huron Water Surface Temperature 03-29-1999 20:00 GMT [NOAA-14] Notice the high land temperatures in this daytime image.

GLERL is currently receiving an enhanced digital image product suite of 28 images including satellite-derived surface temperature, visible and near-infrared reflectance, brightness temperatures, cloud masks, and satellite/solar zenith angle data from the NOAA/AVHRR (Advanced Very High Resolution Radiometer) series of satellites as well as GOES (Geostationary Operational Environmental Satellites) visible, near infrared, and water vapor data. These products are

NOAA Great Lakes Environmental Research Laboratory ~ 2205 Commonwealth Blvd., Ann Arbor, MI ~ 734-741-2235 ~ April 1999
NOAA CoastWatch Program Great Lakes Node ~ George A. Leshkevich, Manager

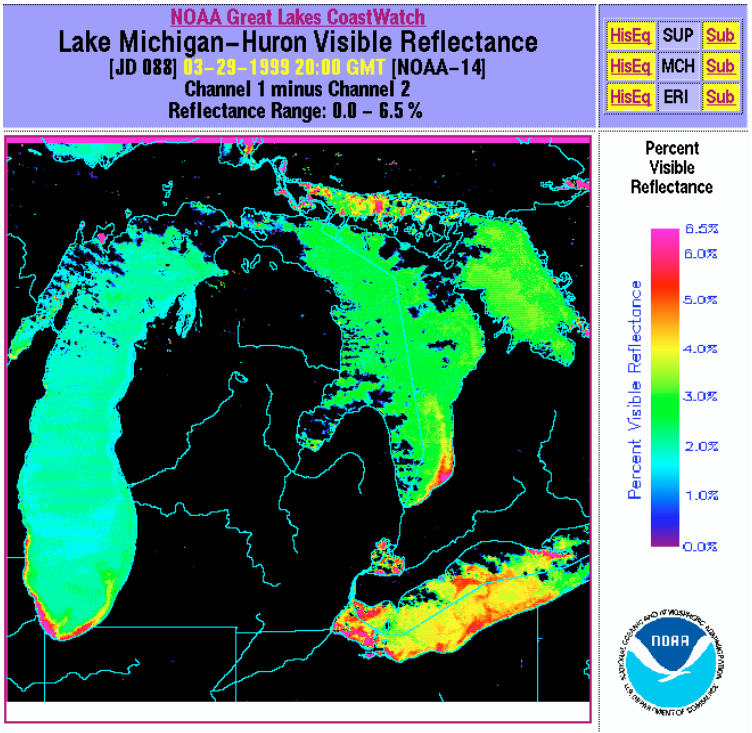


The Great Lakes Surface Environmental Analysis (GLSEA) is a daily, cloud-free composite water surface temperature chart produced from near real-time NOAA/AVHRR satellite temperature imagery. As new imagery is acquired, cloud cover is masked and the valid overwater temperatures are composited with the previous four daily composite charts to create a 5-day composite. The composited temperatures have been validated using in situ water temperatures from buoy measurements. Starting in February 1999, the most recent ice cover concentration obtained from the Great Lakes Ice Analysis produced by the National Ice Center has been overlaid on the GLSEA. Since the daily GLSEA charts are at the same scale and projection, they can be animated to depict the annual temperature/ice cycle on the Great Lakes. These animations are available on the Great Lakes CoastWatch web site.

acquired by GLERL from the National Environmental Satellite, Data, and Information Service (NESDIS) on a daily schedule via Internet. In addition, in-situ and modeled data including marine and meteorological observations, buoy observations, water level gauge measurements from the National Ocean Service (NOS), and Great Lakes Surface Environmental Analysis (GLSEA) composite charts are routinely acquired or produced, stored, and made available to Great Lakes CoastWatch data users. Great Lakes Forecasting System (nowcast and forecast) products are also available to CoastWatch data users. Near real-time AVHRR satellite data for the past 2 weeks are available at GLERL, with access to a retrospective archive beginning in 1990 via the NOAA CoastWatch Archive and Access System (NCAAS). Additional retrospective satellite data is available from the NESDIS Satellite Active Archive (SAA).

In the future, interactive retrieval of physical parameters such as temperature, ice cover, and depth at a given location will enhance the accessibility and utility of Great Lakes CoastWatch data. Plans also include enhancing the present product suite with products derived from new satellite sensors such as synthetic aperture radar (SAR) and ocean color sensors.

Lake Michigan-Huron Visible Reflectance
03-29-1999 20:00 GMT [NOAA-14]
Reflectance Range: 0.0 - 6.5 %.
Notice the high reflectance from the sediment plume in southern Lake Michigan.



CoastWatch Homepage
http://coastwatch.glerl.noaa.gov

CoastWatch Anonymous FTP Site:
ftp://coastwatch.glerl.noaa.gov